

500 MHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -110 dBc/Hz and SMA

The FMXC7000 is a highly reliable Phase Locked Oscillator (PLO) module that operates at a fixed frequency of 500 MHz. This versatile low noise signal source supports a 10 MHz External Reference for design flexibility. Impressive performance includes an output power level of +7 dBm typical and low phase noise of -110 dBc/Hz @ 10 KHz offset typical, while using a +12V single DC supply. The design also exhibits excellent Spurious suppression levels < -70 dBc typical. The PCB solder assembly is RoHS compliant and available in a compact coaxial package that's Nickel plated and supports SMA connectors with DC bias pins and a TTL Lock Detect pin is available to signal an out-of-lock condition. The Phase Locked Oscillator operates over a temperature range of -30°C to +70°C and is designed to meet MIL-STD-202 test conditions for Vibration and Shock.

Electrical Specifications

Description	Min	Typ	Max	Units
Output Frequency		500		MHz
Output Impedance		50		Ohms
Output Power	+4	+7	+10	dBm
Phase Noise @ 1kHz Offset		-100	-95	dBc/Hz
Phase Noise @ 10kHz Offset		-110	-105	dBc/Hz
Phase Noise @ 100kHz Offset		-130	-125	dBc/Hz
Phase Noise @ 1MHz Offset		-150	-145	dBc/Hz
Reference Frequency		10		MHz
Reference Impedance		50		Ohms
Reference Power	+4	+7	+10	dBm
Ref. Phase Noise @ 10Hz Offset		-110		dBc/Hz
Ref. Phase Noise @ 100Hz Offset		-130		dBc/Hz
Ref. Phase Noise @ 1kHz Offset		-145		dBc/Hz
2nd Harmonics		-25	-20	dBc
Spurious		-70	-65	dBc
Lock Detect	5 VDC TTL, High=Lock			
Supply Voltage (DC) 1		12		Vdc
Supply Current (DC) 1		150		mA

Mechanical Specifications

Size	
Length	2 in [50.8 mm]
Width	1.5 in [38.1 mm]
Height	0.6 in [15.24 mm]
Weight	0.104 lbs [47.17 g]
Body Material and Plating	Aluminum

Configuration

Design	Commercial
Reference Type	External
Package Style	Connectorized
Input Connector	SMA Female
Output Connector	SMA Female



Features:

- Phase Locked Oscillator (PLO) Module
- 500 MHz Fixed Frequency
- 10 MHz External Reference Frequency
- Output Power: +7 dBm typical
- Low Phase Noise: -110 dBc/Hz @ 10 kHz offset typical
- Low Spurious Suppression: < -70 dBc typical
- Nickel Plated Compact Package
- SMA Connectors
- TTL Lock Detect Pin
- -30°C to +70°C Operating Temperature
- Designed to meet MIL-STD-202 Test Conditions

Applications:

- Local Oscillator
- Microwave Radio
- Communication and Sensor Systems
- Test Instrumentation
- Telecom Infrastructure
- Electronic Warfare
- Electronic Countermeasures
- Space Systems

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Environmental Specifications

Temperature

Operating Range

Shock

Vibration

ESD Sensitivity

-30 to +70 deg C

IAW MIL-STD-202, Method 213, Condition A

IAW MIL-STD-202, Method 204, Condition A

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

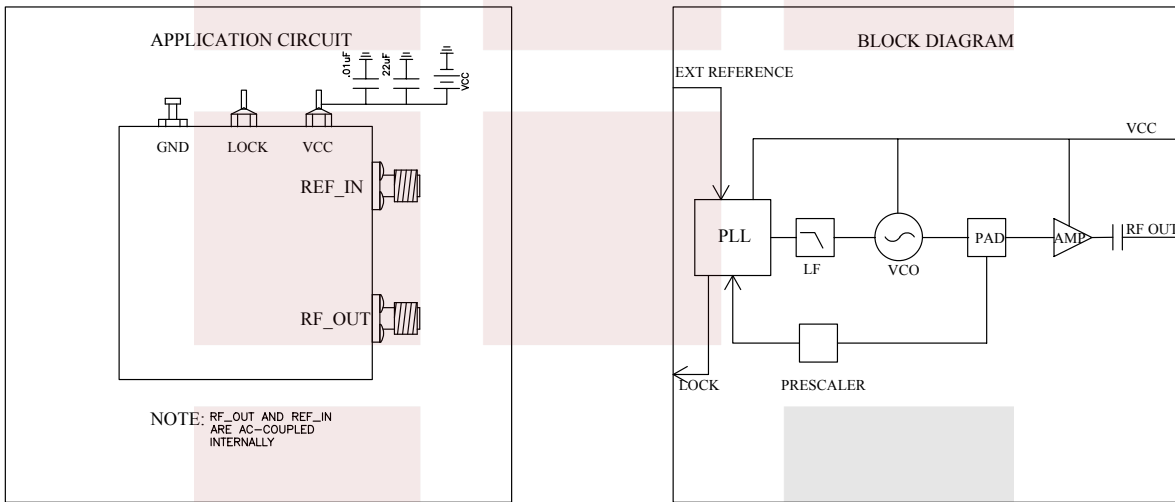


Compliance Certifications (see [product page](#) for current document)

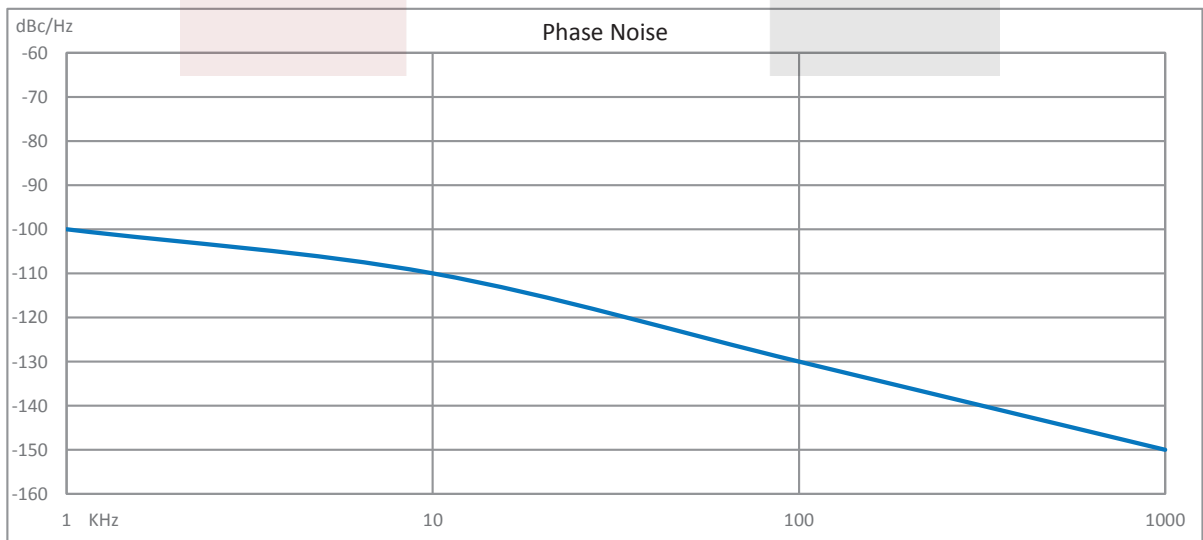
Plotted and Other Data

Notes:

Functional Block Diagram



Typical Performance Data

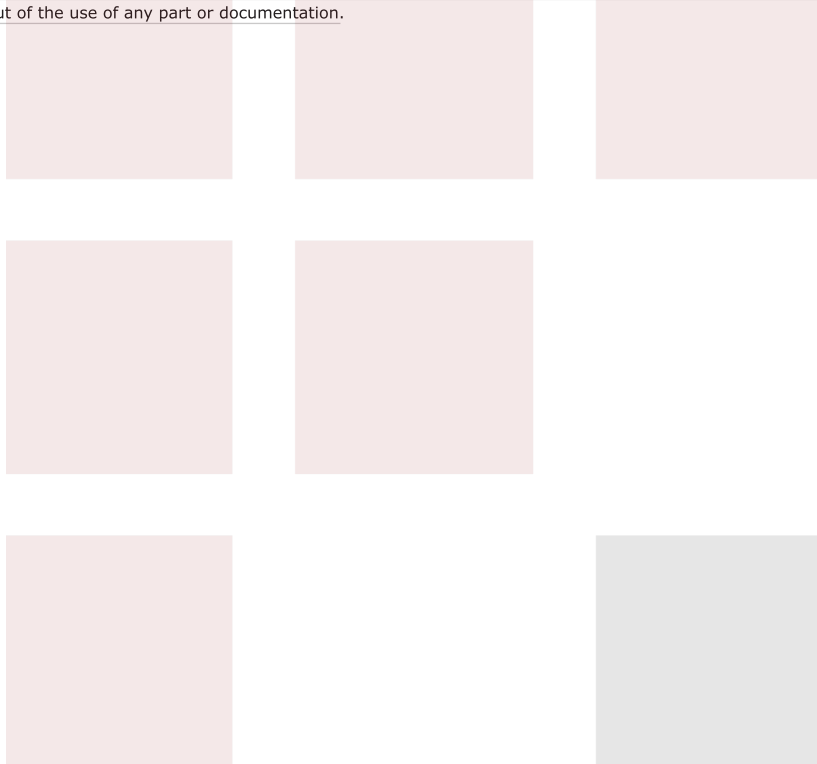


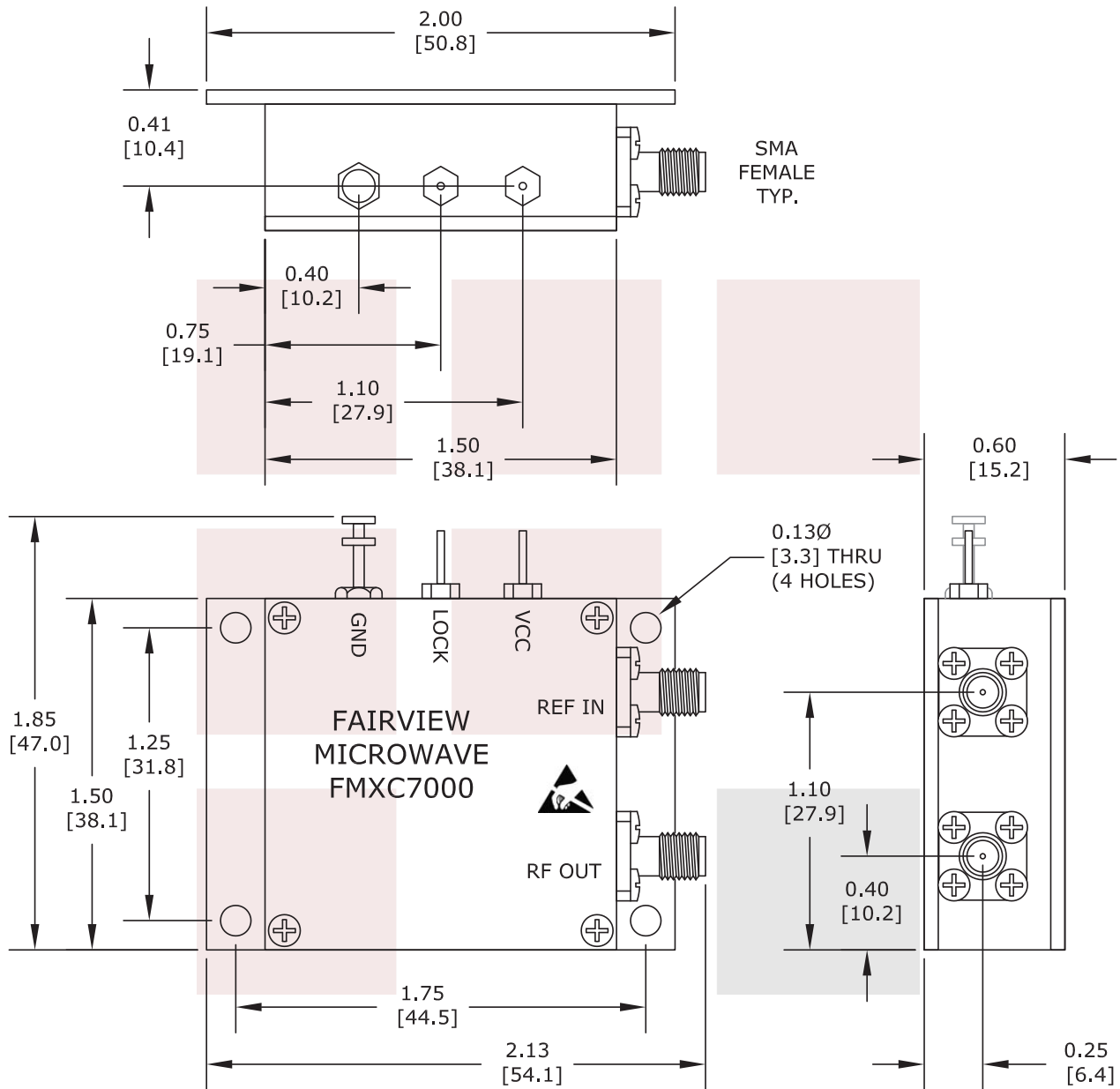
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For additional information on this product, please click the following link: [500 MHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -110 dBc/Hz and SMA FMXC7000](#)

URL: <https://www.fairviewmicrowave.com/500-mhz-phase-locked-oscillator-external-fmxc7000-p.aspx>

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NOTE: HOUSING IS GROUND.

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TITLE 500 MHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -110 dBc/Hz and SMA		DWG NO FMXC7000		CAGE CODE 3FKR5	
CAD FILE	011316	SHEET	SCALE	N/A	SIZE A 2233